

scribed above. Finally, in order to achieve maximum compactness, the S is preferably arranged in mirror-inverted form, as shown in FIGS. 1 and 6.

It will of course be appreciated by those skilled in the art that a variety of modifications of the preferred embodiment as described in detail herein are possible. It is intended, therefore, that the invention not be limited by the above description, but rather that it be limited solely by the appended claims.

We claim:

1. In a fishing reel which includes a spool for receiving a fishing line, means for winding the fishing line on the spool, a crank drive, a cam drive, and a spindle member connected to the spool, the spool having a longitudinal axis and being displaced to and fro parallel to the longitudinal axis between reversing positions of the spool at which a direction of displacement of the spool reverses by means of the cam drive which causes the spindle member to also move to and fro parallel to the longitudinal axis, the cam drive including a guide part having a guide slot which includes sidewalls, said guide part being connected to the spindle member, a gear rotated by said crank drive, a cam stud, and means for eccentrically mounting the cam stud on the gear to rotate in a circular path about an axis of rotation, said stud entering the guide slot and sliding along said sidewalls of the slot to displace said guide part and therefore the spool in the direction parallel to the longitudinal axis, the improvement wherein the guide slot has an elongated S shape, said cam drive forming drive means for causing the cam stud to be approximately midway between end zones of the S when the spool is at said reversing positions of the spool and in one of the end zones of the S when the spool is at a position approximately midway between said reversing positions, wherein a line connecting said end zones of the S subtends a nonzero angle with respect to the direction of displacement of the guide part, and wherein as the spool is moved from one reversing position to a position approximately midway between said reversing positions, and from said position approximately midway between

said reversing positions to a next reversing position, said drive means causes said cam stud to impart to the guide part continuously changing stroke speeds as a result of the shape of the guide slot and displacement of the cam stud, said sidewalls also forming means for causing the stroke speed to increase as the spool approaches one of the reversing positions, and for causing the stroke speed to decrease as the spool approaches the position approximately midway between the reversing positions,

wherein segments of the sidewalls in which the cam stud is located before reversal of the spool displacement direction are spaced farther from a line through the slot whose direction coincides with the direction of displacement of the guide part and which is transverse to said longitudinal direction than are segments of the sidewalls in which the cam stud is located substantially at the side positions.

2. An improvement as claimed in claim 1, wherein the elongated S is in the form of a mirror-inverted letter S.

3. An improvement as claimed in claim 1, wherein the guide slot has arcuate zones and said arcuate zones of the guide slot and the circular path of the cam stud are incongruent.

4. An improvement as claimed in claim 1, wherein near the two side positions, an angle of the sidewalls relative to the direction of displacement of the guide part is approximately 40°-45°, and an angle of the sidewalls near the reversing positions in the direction of displacement of the guide part is approximately 70°-75°, slopes of the sidewalls relative to the travel direction changing continuously, without abrupt transitions from one position to the next.

5. An improvement as claimed in claim 1, wherein said nonzero angle is an approximately 90° angle.

6. An improvement as claimed in claim 1, wherein a curvature of the sidewall of the guide slot is such that stroke distance of the spool is larger than a stroke distance moved by the cam stud in the direction of spool movement.

* * * * *

45

50

55

60

65